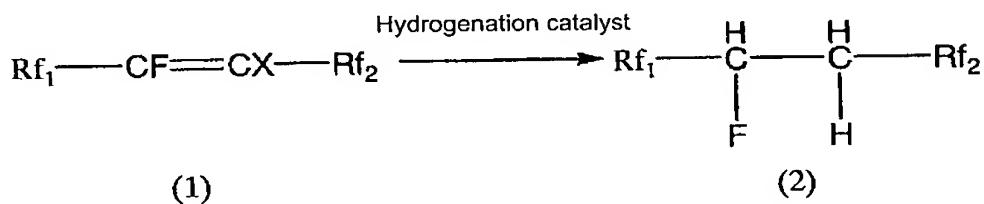


ABSTRACT OF THE DISCLOSURE

Porous calcium fluoride having a large surface area, a method for producing the same, a catalyst (for hydrogenation reaction in particular) using the porous calcium fluoride as a carrier with superior activity, selectivity, and durability, and a method for producing trihydrofluorocarbon using the catalyst. The porous calcium fluoride having a BET surface area of 20m²/g to 200 m²/g is prepared by reacting soda lime with hydrogen fluoride. The carried catalyst (for hydrogenation reaction in particurar) is obtained by causing a metal or metal compound to be carried on carrier formed of the porous calcium fluoride. Trihydrofluorocarbon (2) is produced by causing a fluoroalkene (1) to contact hydrogen in the presence of the catalyst for hydrogenation reaction.



wherein X denotes a halogen atom, Rf₁ and Rf₂ individually denote a fluorine or a parafluoroalkyl group, and Rf₁ may be bonded to Rf₂ to form a ring.